ICF-M400L

SERVICE MANUAL

AEP Model
UK Model

SPECIFICATIONS

	FM	MW	LW
Frequency range	87.5 – 108 MHz	531 – 1,602 kHz	153 – 281 kHz
Tuning interval	50 kHz	9 kHz	2 kHz → 7 kHz

Antennas — FM : Telescopic antenna
MW/LW: Built-in ferrite bar antenna

Speaker — Approx. 9.2 cm ($3^5/_8$ inches) dia.

Power output — 250 mW (at 10% harmonic distortion)

Output — Earphone jack (minijack) for 8-ohm earphone

Power requirements
6 V DC with four R6 (size AA) batteries
240 V AC, 50 Hz (model for U.K.) or 220 V AC, 50 Hz (models for other countries)

Battery life — Approx. 28 hous of listening for four hours a day at a normal volume using Sony batteries SUM-3 (NS)

Dimensions — Approx. 241 × 124 × 62 mm (w/h/d) ($9^1/_2 \times 5 \times 2^1/_2$ inches) incl. projecting parts and controls

Weight — Approx. 950 g (2 lb 1 oz) incl. batteries

Supplied accessory
AC power cord (1)

Design and specifications subject to change without notice.

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

Features

- A quartz-controlled PLL (Phase Locked Loop) synthesizer system using a microcomputer for easy pinpoint tuning.
  The tuned-in frequency is digitally displayed.
- Up to 5 stations in each band can be preset.
- Two alarm modes available: radio or buzzer
- Digital clock is built-in. The current time and alarm time are digitally displayed.
- A sleep timer turns the radio off automatically at the preset time.
- Two different power sources: batteries and house current

FM/MW/LW 3 BAND
PLL SYNTHESIZED RECEIVER

SONY®

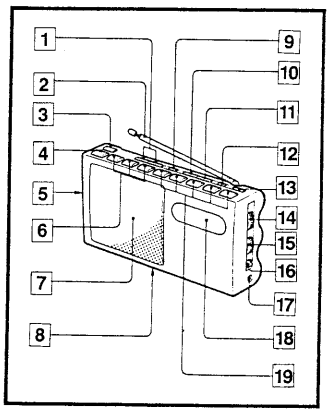
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1
GENERAL

A Location of Controls

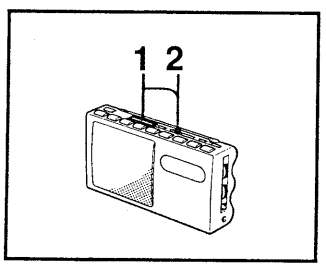
A Location of Controls



1 SCAN/TIME ADJ (adjustement) +/− buttons
2 Telescopic antenna
3 SLEEP button
4 OFF button
5 AC IN jack (left side)
6 POWER ON/BAND FM/MW/LW buttons
7 Speaker
8 Battery compartment (bottom)
9 ENTER button
10 TIME SET CLOCK button
11 ALARM button
12 ALARM mode selector (RADIO/BUZZER)
13 ALARM SET button
14 VOLUME control
15 TONE control
16 SENS DX/LOCAL selector
17 Ø (earphone) jack
18 Display window
19 PRESET TUNING buttons

D How to Set the Clock

D How to Set the Clock



1 Keep the TIME SET CLOCK button pressed, and then press the TIME ADJ + or − button repeatedly.
When the + or − button is kept pressed, the digits are rapidly advanced.

2 Release the TIME SET CLOCK button.
The clock will begin to operate.

- The current time can be set even when the radio is on.
- The current time is displayed when the radio is off.

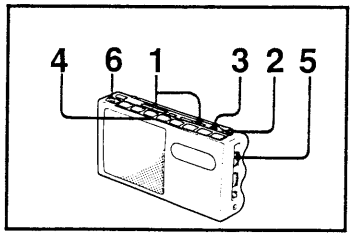
12-hour system model (for U.K.)
AM 12:00 = Midnight
PM 12:00 = Noon

24-hour system model (for other countries)
0:00 = Midnight
12:00 = Noon

To set the time exactly to the second with a telephone time signal
Example: to set to 7:15 to the second

1 Set the time to 7:15 and keep the TIME SET CLOCK button pressed.
2 Release the TIME SET CLOCK button simultaneously with the telephone time signal.

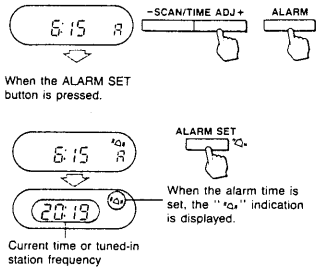
J To Set the Alarm Time



J To Set the Alarm Time

Radio alarm (6 steps)	Buzzer alarm (3 steps)
1 Set the alarm time. Keep the ALARM button pressed, and then press the TIME ADJ + or − button.	
2 Press the ALARM SET button so that the "⏰" indication is displayed. The unit will be in the alarm standby mode.	
3 Set the ALARM mode selector to RADIO.	**3** Set the ALARM mode selector to BUZZER. The buzzer alarm comes on even when the radio is on. The radio will be turned off.
4 Tune in the desired station.	
5 Adjust the volume.	
6 Press the OFF button.	

K



The display varies according to countries. (These illustrations show the display of the 24-hour system model.)

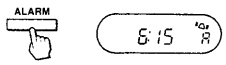
K Example: To set to 6:15

The radio or buzzer alarm will automatically come on at the preset time, and turn itself off after about 60 minutes.

To stop the radio or buzzer alarm
Press the OFF button. The alarm sound will come on again at the same time next day.

To cancel the alarm before the preset time
Press the ALARM SET button so that the "⏰" indication disappears.

L

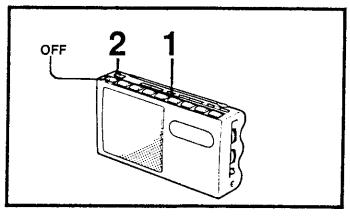


L To check the alarm preset time
Press the ALARM button.
The alarm preset time and "A" indication is displayed on the display window.
When the button is released, the previous display will resume.

Notes

- Be sure not to forget to press the ALARM SET button, or the alarm sound will not come on.
- The buzzer alarm level is fixed, and has no relation to the VOLUME control setting.

M To Turn Off the Radio Automatically at the Preset Time—Sleep Timer



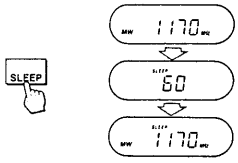
M To Turn Off the Radio Automatically at the Preset Time—Sleep Timer

1 Tune in the desired station.

2 Set the sleep timer (90, 60 or 30 minutes), by pressing SLEEP.

The radio will be turned off automatically after the preset time.

N

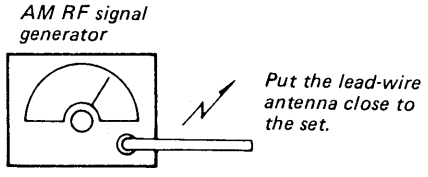


N Example: to set the timer to 60 minutes

To turn off the radio before the preset time
Press the OFF button.

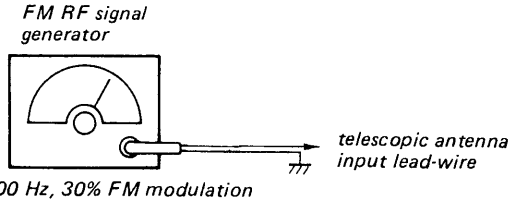
SECTION 2
ADJUSTMENTS

AM Section **0 dB=1 μV**

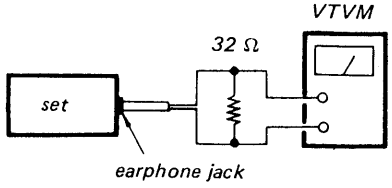


400 Hz, 30% AM modulation
Output level: as low as possible

FM Section



400 Hz, 30% FM modulation
frequency deviation ±22.5 kHz
Output level: as low possible



- Repeat the procedures in each adjustment several times, and the tracking adjustments should be finally done by the trimmer capacitors.

AM IF ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
T1	450 kHz

MW VCO ADJUSTMENT		
Adjustment Part	Frequency Display	Reading on Digital Voltmeter ①.
L5	1,602 kHz	8.4 ± 0.1 V

Note: Not use the AM rf signal generator in this adjustment.

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L2-2	621 kHz
CT2	1,395 kHz

LW VCO ADJUSTMENT		
Adjustment Part	Frequency Display	Reading on Digital Voltmeter ①.
CT4	279 kHz	7 ±0.1 V

Note: Not use the AM rf signal generator in this adjustment.

LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L2-1	171 kHz
CT1	252 kHz

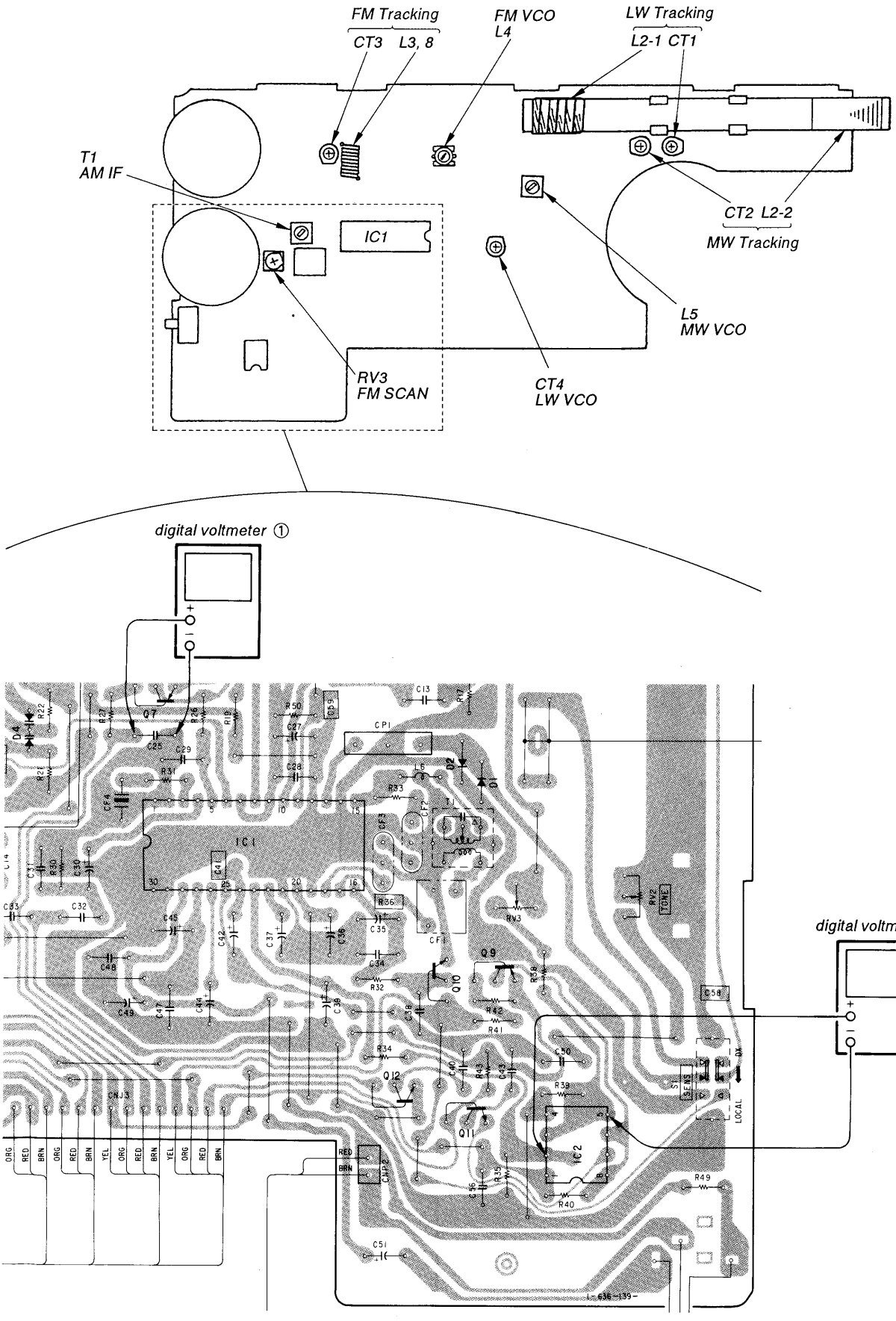
FM VCO ADJUSTMENT		
Adjustment Part	Frequency Display	Reading on Digital Voltmeter ①.
L4	108 MHz	8 ± 0.1 V

Note: Not use the FM rf signal generator in this adjustment.

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L3, 8	87.5 MHz
CT3	108 MHz

FM SCAN ADJUSTMENT		
FM rf signal generator	Modulation	no modulation
	Carrier frequency	98.025 MHz
	Output level	501 μV (54 dB)
Adjustment Part	Frequency Display	Reading on Digital Voltmeter ②.
RV3	98.00 MHz	0 V

- **Adjustment Location**



SECTION 3
DIAGRAMS

3-1. SCHEMATIC DIAGRAM

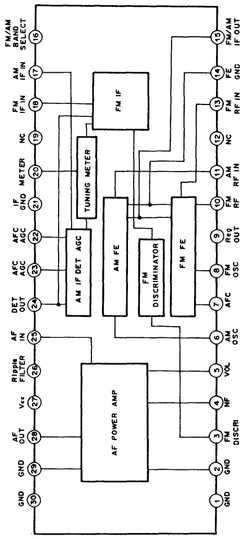
Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.

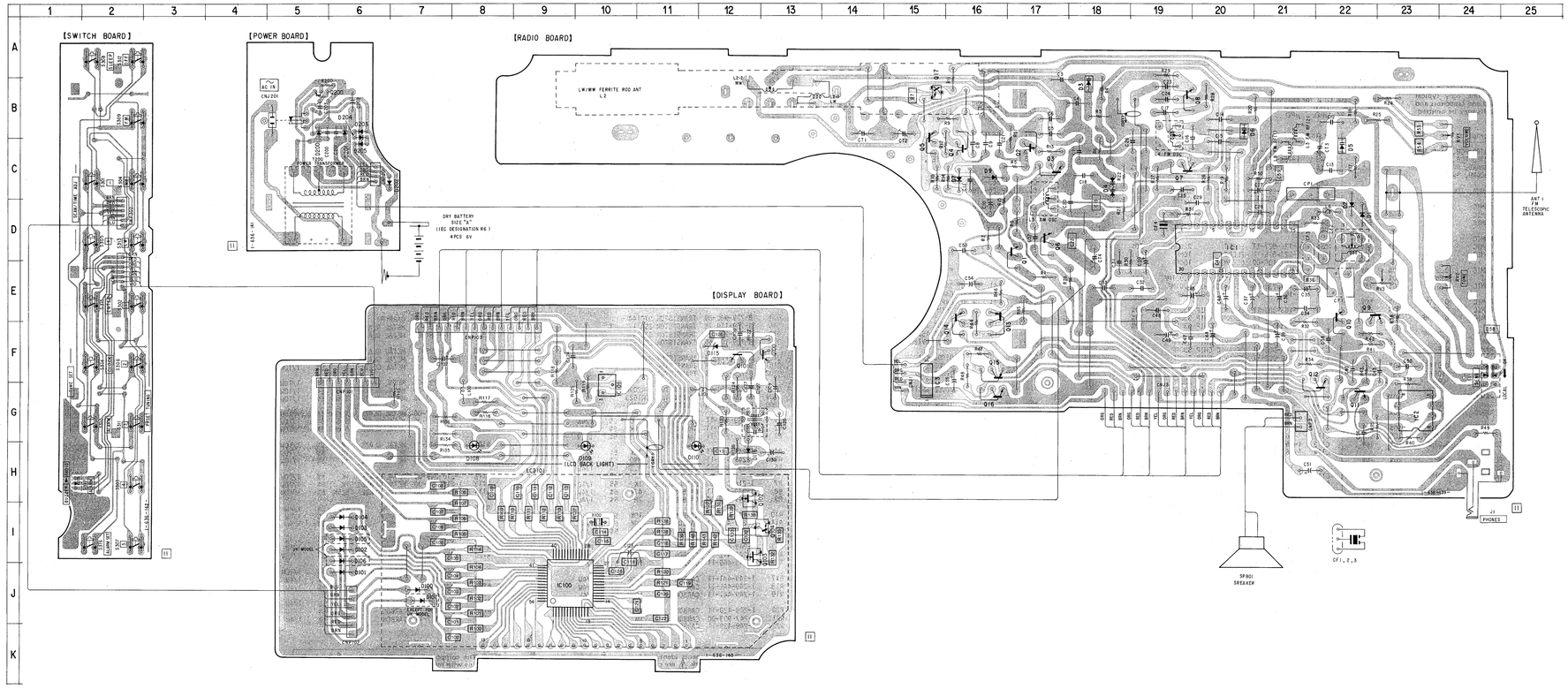
> **Note:** The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
> Replace only with part number specified.

- **B+** : B + Line.
- Power voltage is dc 6 V and fed with regurated dc power supply from battery terminal.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : AM
  { } : OFF mode
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM

IC1 CXA1019S



3-2. PRINTED WIRING BOARDS



• **Semiconductor Location**

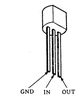
Ref. No.	Location
D1	D-22
D2	D-22
D3	B-16
D4	C-18
D5	C-22
D6	B-20
D7	C-16
D9	C-16
D100	J-7
D101	J-6
D102	I-6
D103	I-6
D104	I-6
D105	I-6
D106	I-6
D107	J-7
D108	H-8
D109	H-10
D110	H-11
D115	F-12
D116	H-12
D200	B-5
D201	B-6
D202	C-6
D203	B-6
D204	B-6
D205	C-6
IC1	D-20
IC2	G-23
IC3	F-15
IC100	J-9
IC101	G-10
Q1	D-17
Q2	C-17
Q3	C-17
Q4	C-16
Q5	C-15
Q6	D-17
Q7	C-19
Q8	B-19
Q9	E-22
Q10	E-22
Q11	G-22
Q12	F-21
Q13	E-16
Q14	E-16
Q15	F-15
Q16	G-16
Q17	B-15
Q100	F-13
Q101	F-12
Q102	H-12
Q103	I-12
Q104	I-13
Q200	B-5

Note:

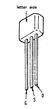
- ○—□ : parts extracted from the component side.
- □—□ : indicates side identified with part number.

• **Semiconductor Lead Layouts**

S-81230AG

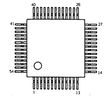


2SK193-K

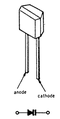


10E2

μPD1715G-639-22



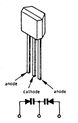
KV1230Z



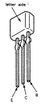
SLB-24YY3F

DTC144ES

KV1260



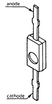
2SA1150
2SA1175-HFE
2SC2785-HFE
2SC2786-K



MTZJ-11B
1SS119

2SC2001-K2

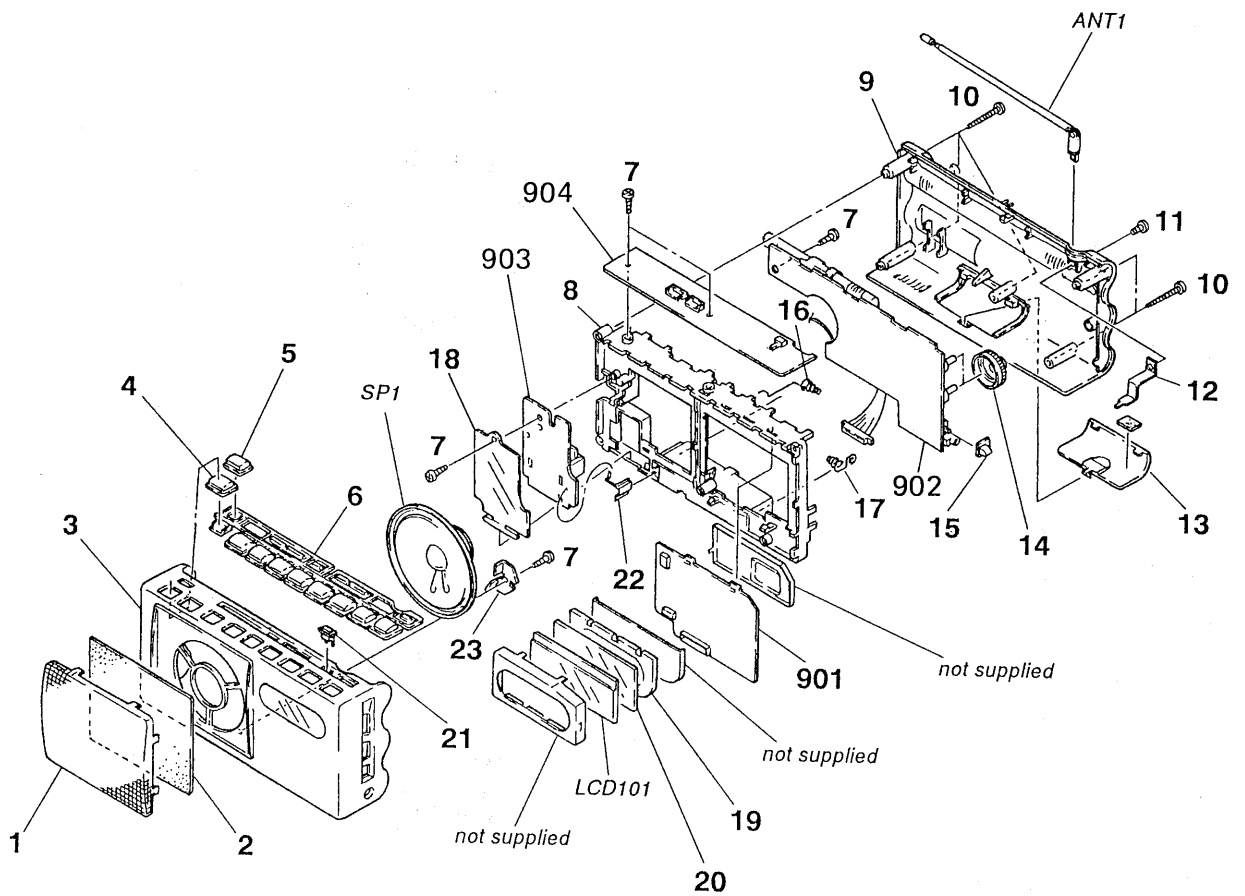
1T32
1T33



SECTION 4
EXPLODED VIEW

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts Color



No.	Part No.	Description	Remarks
1	3-902-852-01	GRILLE, SPEAKER	
2	3-902-845-01	SCREEN (SP)	
3	X-3362-293-1	FRONT CABINET ASSY	
4	3-902-843-01	BUTTON (OFF)	
5	3-902-844-01	BUTTON (SLEEP)	
6	3-902-853-01	BUTTON BLOCK	
7	7-685-647-79	SCREW +BTP 3X10 TYPE2 N-S	
8	*3-902-854-01	CHASSIS	
9	3-902-855-01	CABINET (REAR)	
10	7-685-152-19	SCREW +BTP 3X25 TYPE2 N-S	
11	7-682-546-09	SCREW +B 3X5	
12	*3-902-838-01	BRACKET, ANTENNA	
13	3-902-850-01	LID, BATTERY CASE	
14	3-902-836-01	KNOB (VOL)	
15	3-902-842-01	KNOB (SENS)	
16	3-902-840-01	SPRING (-), BATTERY COIL	
17	3-902-841-01	SPRING (+-), BATTERY COIL	
18	*3-362-299-01	SHEET, INSULATING	
19	*3-902-851-01	PLATE, LIGHT GUIDE	
20	*3-902-848-01	ILLUMINATOR	
21	3-902-837-01	KNOB (ALARM)	
22	3-902-839-01	TERMINAL, PLUS	
23	3-362-298-01	RETAINER (SP)	
901	*A-3615-402-A	MOUNTED PCB, DISPLAY	
902	*A-3670-049-A	MOUNTED PCB, RADIO	
903	*1-636-141-11	PC BOARD, POWER	
904	*1-636-142-11	PC BOARD, SWITCH	
ANT1	1-501-483-11	ANTENNA, TELESCOPIC	
SP1	1-503-915-11	SPEAKER	

SECTION 5
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description			
901	*A-3615-402-A	MOUNTED PCB, DISPLAY			
902	*A-3670-049-A	MOUNTED PCB, RADIO			
903	*1-636-141-11	PC BOARD, POWER			
904	*1-636-142-11	PC BOARD, SWITCH			
ANT1	1-501-483-11	ANTENNA, TELESCOPIC			
C3	1-162-839-11	CERAMIC	0.01MF	10%	16V
C4	1-162-839-11	CERAMIC	0.01MF	10%	16V
C5	1-101-081-00	CERAMIC	130PF	5%	50V
C6	1-102-821-00	CERAMIC	360PF	5%	50V
C7	1-162-839-11	CERAMIC	0.01MF	10%	16V
C8	1-162-839-11	CERAMIC	0.01MF	10%	16V
C9	1-162-839-11	CERAMIC	0.01MF	10%	16V
C10	1-124-126-00	ELECT	47MF	20%	10V
C11	1-162-839-11	CERAMIC	0.01MF	10%	16V
C12	1-102-074-00	CERAMIC	0.001MF	10%	50V
C13	1-102-074-00	CERAMIC	0.001MF	10%	50V
C14	1-102-074-00	CERAMIC	0.001MF	10%	50V
C15	1-102-074-00	CERAMIC	0.001MF	10%	50V
C16	1-102-937-00	CERAMIC	4PF	0.25PF	50V
C17	1-102-808-81	CERAMIC	6PF	1PF	50V
C18	1-162-839-11	CERAMIC	0.01MF	10%	16V
C19	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C20	1-102-947-00	CERAMIC	10PF	0.5%	50V
C21	1-162-839-11	CERAMIC	0.01MF	10%	16V
C22	1-163-128-00	CERAMIC CHIP	300PF	5%	50V
C23	1-102-074-00	CERAMIC	0.001MF	10%	50V
C24	1-162-839-11	CERAMIC	0.01MF	10%	16V
C25	1-102-074-00	CERAMIC	0.001MF	10%	50V
C26	1-162-839-11	CERAMIC	0.01MF	10%	16V
C27	1-124-963-11	ELECT	33MF	20%	16V
C28	1-162-839-11	CERAMIC	0.01MF	10%	16V
C29	1-162-839-11	CERAMIC	0.01MF	10%	16V
C30	1-124-927-11	ELECT	4.7MF	20%	50V
C31	1-162-839-11	CERAMIC	0.01MF	10%	16V
C32	1-162-847-11	CERAMIC	0.047MF	10%	16V
C33	1-102-106-00	CERAMIC	100PF	10%	50V
C34	1-162-839-11	CERAMIC	0.01MF	10%	16V
C35	1-124-252-00	ELECT	0.33MF	20%	50V
C36	1-123-382-00	ELECT	3.3MF	20%	50V
C37	1-123-382-00	ELECT	3.3MF	20%	50V
C38	1-162-843-11	CERAMIC	0.022MF	10%	16V
C39	1-124-925-11	ELECT	2.2MF	20%	50V
C40	1-162-847-11	CERAMIC	0.047MF	10%	16V
C41	1-163-024-00	CERAMIC CHIP	0.018MF	10%	50V

Ref.No.	Part No.	Description			
C42	1-124-791-11	ELECT	1MF	20%	50V
C43	1-162-851-11	CERAMIC	0.1MF	10%	16V
C44	1-124-126-00	ELECT	47MF	20%	10V
C45	1-124-472-11	ELECT	470MF	20%	10V
C47	1-162-851-11	CERAMIC	0.1MF	10%	16V
C48	1-162-851-11	CERAMIC	0.1MF	10%	16V
C49	1-124-902-00	ELECT	0.47MF	20%	50V
C50	1-161-057-00	CERAMIC	0.033MF	10%	16V
C51	1-124-472-11	ELECT	470MF	20%	6.3V
C54	1-126-927-11	ELECT	2200MF	20%	10V
C55	1-123-875-11	ELECT	10MF	20%	50V
C56	1-102-106-00	CERAMIC	100PF	10%	50V
C57	1-102-074-00	CERAMIC	0.001MF	10%	50V
C58	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C59	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C100	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C101	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C102	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C103	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C104	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C105	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C106	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C107	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C108	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C109	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C110	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C111	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C112	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C113	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C114	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C115	1-163-106-00	CERAMIC CHIP	36PF	5%	50V
C116	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C117	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C118	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C119	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C120	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C121	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C122	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C123	1-124-576-11	ELECT	220MF	20%	4V
C124	1-162-839-11	CERAMIC	0.01MF	10%	16V
C126	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C127	1-102-958-00	CERAMIC	20PF	5%	50V
C128	1-162-839-11	CERAMIC	0.01MF	10%	16V
C129	1-124-434-00	ELECT	220MF	20%	4V
C130	1-124-791-11	ELECT	1MF	20%	50V

Ref.No.	Part No.	Description		
C132	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C133	1-164-006-11	CERAMIC CHIP 0.33MF	10%	16V
C135	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C136	1-162-839-11	CERAMIC 0.01MF	10%	16V
C137	1-126-154-11	ELECT 47MF	20%	6.3V
C138	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C200	1-162-850-11	CERAMIC 0.082MF	10%	16V
C201	1-162-850-11	CERAMIC 0.082MF	10%	16V
C202	1-124-556-11	ELECT 2200MF	20%	16V
C203	1-126-101-11	ELECT 100MF	20%	16V
CF1	1-567-777-11	FILTER, CERAMIC		
CF2 CF3 CF4	1-577-325-61	FILTER, CERAMIC		
CNJ2	*1-563-470-11	HOUSING, CONNECTOR 2P		
CNJ201	⚠1-526-838-11	INLET, AC 2P (AC IN)		
CNP1	*1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P		
CNP2	*1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P		
CNP101	*1-566-004-11	PIN, CONNECTOR (PC BOARD) 7P		
CNP102	*1-566-003-11	PIN, CONNECTOR (PC BOARD) 6P		
CNP103	*1-506-996-11	PIN, CONNECTOR (PC BOARD) 14P		
CNP201	*1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P		
CP1	1-235-171-00	FILTER, BAND PASS		
CT1	1-141-245-00	TRIMMER, CERAMIC		
CT2	1-141-229-00	CAP, TRIMMER		
CT3	1-141-229-00	CAP, TRIMMER		
CT4	1-141-260-00	TRIMMER, CERAMIC		
D1	8-719-911-19	DIODE 1SS119		
D2	8-719-911-19	DIODE 1SS119		
D3	8-719-927-77	DIODE KV1230Z		
D4	8-719-936-68	DIODE KV1260		
D5	8-719-949-46	DIODE 1T32		
D6	8-719-949-46	DIODE 1T32		
D7	8-719-911-19	DIODE 1SS119		
D9	8-719-911-19	DIODE 1SS119		
D100	8-719-911-19	DIODE 1SS119		
D101	8-719-911-19	DIODE 1SS119		
D102	8-719-911-19	DIODE 1SS119		
D103	8-719-911-19	DIODE 1SS119		
D104	8-719-911-19	DIODE 1SS119		
D105	8-719-911-19	(UK)...DIODE 1SS119		
D106	8-719-911-19	(UK)...DIODE 1SS119		
D107	8-719-911-19	(EXCEPT FOR UK)...DIODE 1SS119		
D108	8-719-988-06	DIODE SLB-24YY3F		
D109	8-719-988-06	DIODE SLB-24YY3F		
D110	8-719-988-06	DIODE SLB-24YY3F		
D115	8-719-921-80	DIODE MTZJ-11B		
D116	8-719-911-19	DIODE 1SS119		
D200	8-719-200-02	DIODE 10E2		
D201	8-719-200-02	DIODE 10E2		
D202	8-719-911-19	DIODE 1SS119		
D203	8-719-911-19	DIODE 1SS119		
D204	8-719-911-19	DIODE 1SS119		
D205	8-719-911-19	DIODE 1SS119		
IC1	8-752-035-29	IC CXA1019S		
IC2	8-759-987-91	IC BA10393		
IC3	8-759-937-61	IC S-81230AG		

Ref.No.	Part No.	Description		
IC100	8-759-151-71	IC UPD1715G-639-22		
IC101	8-759-945-21	IC S-8052ANB-NE-S		
J1	1-563-836-21	JACK (EARPHONE)		
L1	1-410-316-11	INDUCTOR 1UH		
L2	1-402-513-11	BAR ANT(MW/LW)		
L3	*1-422-121-00	COIL, AIR-CORE		
L4	1-460-004-11	COIL (WITH CORE)		
L5	1-406-253-11	COIL (OSC)		
L6	1-410-324-11	INDUCTOR 4.7UH		
L8	*1-422-121-00	COIL, AIR-CORE		
L100	1-408-417-00	INDUCTOR 47UH		
L101	1-410-336-11	INDUCTOR 220UH		
LCD101	1-809-113-11	DISPLAY PANEL, LIQUID CRYSTAL		
Q1	8-729-119-78	TRANSISTOR 2SC2785-HFE		
Q2	8-729-119-35	TRANSISTOR 2SK193-K		
Q3	8-729-119-78	TRANSISTOR 2SC2785-HFE		
Q4	8-729-119-35	TRANSISTOR 2SK193-K		
Q5	8-729-119-78	TRANSISTOR 2SC2785-HFE		
Q6	8-729-119-78	TRANSISTOR 2SC2785-HFE		
Q7	8-729-119-76	TRANSISTOR 2SA1175-HFE		
Q8	8-729-178-63	TRANSISTOR 2SC2786-K		
Q9	8-729-119-76	TRANSISTOR 2SA1175-HFE		
Q10	8-729-900-89	TRANSISTOR DTC144ES		
Q11	8-729-900-89	TRANSISTOR DTC144ES		
Q12	8-729-900-89	TRANSISTOR DTC144ES		
Q13	8-729-205-02	TRANSISTOR 2SA1150		
Q14	8-729-900-89	TRANSISTOR DTC144ES		
Q15	8-729-119-76	TRANSISTOR 2SA1175-HFE		
Q16	8-729-900-89	TRANSISTOR DTC144ES		
Q17	8-729-100-66	TRANSISTOR 2SC1623		
Q100	8-729-119-78	TRANSISTOR 2SC2785-HFE		
Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE		
Q102	8-729-220-93	TRANSISTOR 2SK209G		
Q103	8-729-220-93	TRANSISTOR 2SK209G		
Q104	8-729-100-66	TRANSISTOR 2SC1623		
Q200	8-729-100-13	TRANSISTOR 2SC2001-K2		
R1	1-249-441-11	CARBON 100K	5%	1/4W
R2	1-249-429-11	CARBON 10K	5%	1/4W
R3	1-259-882-11	CARBON 3.3M	5%	1/4W
R4	1-249-429-11	CARBON 10K	5%	1/4W
R5	1-249-412-11	CARBON 390	5%	1/4W
R6	1-259-882-11	CARBON 3.3M	5%	1/4W
R7	1-216-049-00	METAL GLAZE 1K	5%	1/10W
R8	1-249-437-11	CARBON 47K	5%	1/4W
R9	1-247-903-00	CARBON 1M	5%	1/4W
R10	1-249-429-11	CARBON 10K	5%	1/4W
R11	1-249-429-11	CARBON 10K	5%	1/4W
R12	1-249-405-11	CARBON 100	5%	1/4W
R13	1-249-405-11	CARBON 100	5%	1/4W
R14	1-249-412-11	CARBON 390	5%	1/4W
R15	1-249-405-11	CARBON 10	5%	1/4W
R17	1-249-441-11	CARBON 100K	5%	1/4W
R18	1-249-441-11	CARBON 100K	5%	1/4W
R19	1-249-441-11	CARBON 100K	5%	1/4W
R20	1-249-429-11	CARBON 10K	5%	1/4W
R21	1-247-903-00	CARBON 1M	5%	1/4W
R22	1-249-429-11	CARBON 10K	5%	1/4W

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description			
R23	1-249-429-11	CARBON	10K	5%	1/4W
R24	1-249-417-11	CARBON	1K	5%	1/4W
R25	1-249-417-11	CARBON	1K	5%	1/4W
R26	1-249-417-11	CARBON	1K	5%	1/4W
R27	1-249-433-11	CARBON	22K	5%	1/4W
R28	1-249-435-11	CARBON	33K	5%	1/4W
R29	1-249-405-11	CARBON	100	5%	1/4W
R30	1-249-407-11	CARBON	150	5%	1/4W
R31	1-249-410-11	CARBON	270	5%	1/4W
R32	1-249-429-11	CARBON	10K	5%	1/4W
R33	1-249-411-11	CARBON	330	5%	1/4W
R34	1-249-441-11	CARBON	100K	5%	1/4W
R35	1-249-441-11	CARBON	100K	5%	1/4W
R36	1-249-421-11	CARBON	2.2K	5%	1/4W
R38	1-249-435-11	CARBON	33K	5%	1/4W
R39	1-249-437-11	CARBON	47K	5%	1/4W
R40	1-249-437-11	CARBON	47K	5%	1/4W
R41	1-249-429-11	CARBON	10K	5%	1/4W
R42	1-249-429-11	CARBON	10K	5%	1/4W
R43	1-249-429-11	CARBON	10K	5%	1/4W
R44	1-249-421-11	CARBON	2.2K	5%	1/4W
R45	1-247-895-00	CARBON	470K	5%	1/4W
R46	1-249-405-11	CARBON	100	5%	1/4W
R47	1-247-895-00	CARBON	470K	5%	1/4W
R48	1-249-421-11	CARBON	2.2K	5%	1/4W
R49	1-249-401-11	CARBON	47	5%	1/4W
R50	1-249-437-11	CARBON	47K	5%	1/4W
R51	1-247-903-00	CARBON	1M	5%	1/4W
R53	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R54	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R100	1-216-295-00	METAL GLAZE	0	5%	1/10W
R101	1-216-295-00	METAL GLAZE	0	5%	1/10W
R102	1-216-295-00	METAL GLAZE	0	5%	1/10W
R103	1-216-295-00	METAL GLAZE	0	5%	1/10W
R104	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R105	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R106	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R107	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R108	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R109	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R110	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R111	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R112	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R113	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R114	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R115	1-247-895-00	CARBON	470K	5%	1/4W
R116	1-247-895-00	CARBON	470K	5%	1/4W
R117	1-249-393-11	CARBON	10	5%	1/4W
R118	1-249-437-11	CARBON	47K	5%	1/4W
R119	1-247-903-00	CARBON	1M	5%	1/4W
R120	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R121	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R122	1-249-437-11	CARBON	47K	5%	1/4W
R123	1-249-441-11	CARBON	100K	5%	1/4W
R124	1-249-441-11	CARBON	100K	5%	1/4W
R125	1-249-440-11	CARBON	82K	5%	1/4W
R126	1-249-417-11	CARBON	1K	5%	1/4W

Ref.No.	Part No.	Description			
R127	1-216-295-00	METAL GLAZE	0	5%	1/10W
R128	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R129	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R130	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R131	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R132	1-216-070-00	METAL GLAZE	7.5K	5%	1/10W
R133	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R134	1-247-818-11	CARBON	300	5%	1/4W
R135	1-247-818-11	CARBON	300	5%	1/4W
R136	1-247-818-11	CARBON	300	5%	1/4W
R137	1-216-295-00	METAL GLAZE	0	5%	1/10W
R138	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R139	1-216-033-00	METAL GLAZE	220	5%	1/10W
R140	1-216-033-00	METAL GLAZE	220	5%	1/10W
R141	1-216-295-00	METAL GLAZE	0	5%	1/10W
R142	1-216-295-00	METAL GLAZE	0	5%	1/10W
R200	1-249-410-11	CARBON	270	5%	1/4W
RV1	1-241-217-11	RES, VAR 50K (VOLUME)			
RV2	1-241-216-11	RES, VAR 20K (TONE)			
RV3	1-238-017-11	RES, ADJ, CARBON 22K			
S1	1-554-123-00	SWITCH, SLIDE (SENS)			
S301	1-554-303-21	SWITCH, KEY BOARD (SCAN/TIME ADJ:-)			
S302	1-554-303-21	SWITCH, KEY BOARD (PRESET TUNING 1)			
S303	1-554-303-21	SWITCH, KEY BOARD (PRESET TUNING 4)			
S304	1-554-303-21	SWITCH, KEY BOARD (MW)			
S305	1-554-303-21	SWITCH, KEY BOARD (SCAN/TIME ADJ:+)			
S306	1-554-303-21	SWITCH, KEY BOARD (PRESET TUNING 2)			
S307	1-554-303-21	SWITCH, KEY BOARD (PRESET TUNING 5)			
S308	1-554-303-21	SWITCH, KEY BOARD (SLEEP)			
S309	1-554-303-21	SWITCH, KEY BOARD (FM)			
S310	1-554-303-21	SWITCH, KEY BOARD (TIME SET:ALARM)			
S311	1-554-303-21	SWITCH, KEY BOARD (PRESET TUNING)			
S312	1-554-303-21	SWITCH, KEY BOARD (OFF)			
S313	1-554-303-21	SWITCH, KEY BOARD (LW)			
S314	1-554-303-21	SWITCH, KEY BOARD (TIME SET:CLOCK)			
S315	1-554-303-21	SWITCH, KEY BOARD (ENTER)			
S316	1-554-303-21	SWITCH, KEY BOARD (ALARM SET)			
S317	1-572-386-11	SWITCH, SLIDE (ALARM)			
SP1	1-503-915-11	SPEAKER			
T1	1-404-790-11	TRANSFORMER, IF			
T100	1-449-138-11	TRANSFORMER, DC-DC CONVERTER			
T200	⚠1-450-208-11	(EXCEPT FOR UK)...TRANSFORMER, POWER			
T200	⚠1-450-209-11	(UK).....TRANSFORMER, POWER			
X100	1-567-769-11	VIBRATOR, CRYSTAL 75kHz			

ACCESSORY & PACKING MATERIAL

⚠1-558-032-11	(UK).....CORD, POWER
⚠1-558-638-11	(EXCEPT FOR UK)...CORD, POWER
*3-362-498-01	(EXCEPT FOR UK)...INDIVIDUAL CARTON
*3-363-100-01	(UK).....INDIVIDUAL CARTON
*3-362-501-01	CUSHION
3-752-107-11	(AEP,UK,FRENCH)...MANUAL, INSTRUCTION (ENGLISH,FRENCH,GERMAN,SWEDISH)
3-752-107-41	(AEP,ITALIAN).....MANUAL, INSTRUCTION (DUTCH,SPANISH,ITALIAN,PORTUGUESE)

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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